ICF International / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) RF
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105041 Amendment 3

DATE: March 14, 2007

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG No.:	06-1647
Laboratory:	Applied Physics & Chemistry Laboratory (APCL)
Analysis:	Hexavalent Chromium
Samples:	4 Water Samples (see Case Summary)
Collection Dates:	March 6, 2006
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: [X] Yes [ ] No

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SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: None
SDG No.: 06-1647
Site: Omega Chem OU2
Laboratory: Applied Physics & Chemistry Laboratory (APCL)
Reviewer: Stan Kott, ESAT/LDC
Date: March 14, 2007

I. CASE SUMMARY

Sample Information

Samples:	OC2-MW7-W-0-155, OC2-MW8C-W-0-157, OC2-MW8B-W-0-158, and OC2-MW8A-W-0-159
Concentration and Matrix:	Low Concentration Water
Analysis:	Hexavalent Chromium
SOW:	EPA Method 218.6
Collection Date:	March 6, 2006
Sample Receipt Date:	March 6, 2006
Preparation Date:	March 6, 2006
Analysis Date:	March 6, 2006

Field QC

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

Laboratory QC

Method Blanks (MB):	MB
Associated Samples:	Samples listed above
Matrix Spike (MS)/MS Duplicate (MSD):	OC2-MW7-W-0-155MS/MSD
Duplicates:	Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)
Analysis:	Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	March 6, 2006	March 6, 2006

Sampling Issues

The Chain of Custody (COC) record form did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected sample OC2-MW7-W-0-155 for QC analysis. The effect on data quality is not known.

Additional Comments

As directed by the EPA TOPO, a Tier 3 data review was performed. A Table 1A is not requested.

The calculated percent difference (%D) for calibration standards 0.20 µg/L and 5.0 µg/L is 25 %D and 23 %D, respectively, and exceed the 10% limit. The 10% limit was derived from the ±10% limit used in method 218.6 to determine the linear dynamic range upper limit. The high %D indicates that the calibration may not be linear at the low end of the curve. Since the analytical method does not require analysis of a practical quantitation limit (PQL) standard to confirm linearity of the calibration curve at the 1 µg/L PQL, results less than 20 µg/L may have a high bias.

The method specifies the sample pH be adjusted to 9.0 to 9.5 prior to analysis; however, there is no method specific requirement to document the sample pH. The pH of the samples prior to analysis could not be evaluated. The effect on data quality is not known.

Initial and continuing calibration blank data were not provided and could not be evaluated. The effect on data quality is not known.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Methods For The Determination Of Metals In Environmental Samples*, EPA-600/4-91-010, June 1991; and
- *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3.3, May 1994.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	No	A
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	Yes	
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	Yes	
8.	Field Duplicate Sample Analysis	N/A	
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results should be flagged "J" because the final continuing calibration verification (CCV) standard result is outside method QC limits.

- Hexavalent chromium in all samples

The CCV2 recovery result for hexavalent chromium does not meet the 95-105% criterion for accuracy specified in the method. The recovery for hexavalent chromium is presented below and is based on an ideal recovery of 100%.

Analyte	% Recovery
Hexavalent Chromium (CCV2)	106

Since CCV2 was not reanalyzed as required by the method, results greater than or equal to the practical quantitation limit (PQL) are considered quantitatively uncertain. The results reported for hexavalent chromium in all samples may be biased high.

The inorganic method indicates that the laboratory verify that the instrument is properly calibrated on a continuing basis. Laboratory reagent blank (LRB) and laboratory performance check standards (LPC) are analyzed after every 10 analytical samples to determine the validity of the calibration.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.